REMARKS

Claims 1, 3-6, 8, 9, 11, 12 and 14-20 were rejected under 35 U.S.C. 102(b) as anticipated by Fechalos (US 4,737,950). Claims 21-25, 29 and 30 were rejected under 35 U.S.C. 102(b) as anticipated by Tubel et al (US 5,959,547). Claim 10 was rejected under 35 U.S.C. 103(a) as unpatentable over Fechalos. Claims 2 and 13 were rejected under 35 U.S.C. 103(a) as unpatentable over Fechalos in view of Tubel et al. Claim 7 was rejected under 35 U.S.C. 103(a) as unpatentable over Fechalos in view of Jain et al (US 4,608,685). Claim 26 was rejected under 35 U.S.C. 103(a) as unpatentable over Tubel et al in view of Jain et al. Claim 27 was rejected under 35 U.S.C. 103(a) as unpatentable over Tubel et al in view of LoGalbo et al (US 5,220,676). Claim 28 was rejected under 35 U.S.C. 103(a) as unpatentable over Tubel et al in view of Fechalos.

Claims 2 and 13 have been canceled without prejudice. Independent claims 1, 12 and 21 have been amended to clarify novel and nonobvious features of the invention. No new matter was added.

A feature of the present invention is a downhole network integrated into a drill string including a plurality of tubulars configured to form an electromagnetic network when coupled to one another in a column to penetrate a subsurface formation. As illustrated in Figure 8 and described in the specification of the application, a downhole network is formed by a tool string made up of a series of interconnected tubulars forming a drill string (See, e.g., column with drill bit in Figure 8). Additional details regarding the drill string downhole network are also disclosed in the parent application (SN 10/710,790, now US Patent 7,139,218) from which the present application stems, and in US Patent 6,670,880, both incorporated by reference in the present application (See paragraphs 0001 and 0039). Independent claims 1, 12 and 21 have been amended accordingly. The cited art, individually or in combination, does not disclose or suggest all the features of amended claims 1, 12 and 21.

Fechalos, Jain et al, and LoGalbo et al are all devoid of any disclosure relating to the claimed downhole drill string and downhole electromagnetic network formed by a column of coupled tubulars, or any other subsurface application for that matter. Though Tubel et al describes a subsurface system, it does not relate to the claimed invention.

Tubel et al proposes a system for the control of oil and gas production wells. A well becomes a production well after a borehole is drilled and appropriate casing/liners are placed (typically cemented in place and perforated) in a drilled-out borehole. The drill string used in the drilling phase is extracted from the borehole after the well is penetrated to the desired depth, and then the permanent casing/liners are placed into the existing borehole to commence production. Applicants' claimed invention relates to an electromagnetic network integrated into a drill string formed by a column of interconnected tubulars to actually drill a well. This is not a trivial distinction.

For decades, the oilfield industry has sought an improved telemetry system for use in drilling operations. Conventional telemetry systems have used pressure pulses transmitted along a fluid column inside the drill string to convey signals between surface-downhole. Other conventional telemetry systems entail distributed antennas to form wireless links wherein a signal is "hopped" from antenna to antenna along the string. The fact that well drilling operations by their nature require the connection of hundreds of tubulars in a column to form a drill string that is subjected to extreme dynamic and rotational stresses has presented significant technological challenges for such telemetry networks. Applicants' claimed invention presents novel techniques for use in downhole networks integrated into drill strings for drilling operations.

Tubel et al proposes a downhole control system using acoustic signals/coded pressure pulses for communication (See col. 10, lines 3-41). Tubel et al also describes a system entailing a wireless or wired communication channel. The proposed wired system entails the use of a very long electrical wire or cable (referred to as a "wireline") that can be disposed in the well casing/liner precisely because, in the production phase of a well, there is no drilling involved and the casing/liner provides a stationary conduit for long wireline cables. Applicants' claimed invention presents techniques for a downhole electromagnetic network formed by a column of coupled tubulars forming a drill string, for drilling operations. Expressly missing from Tubel et al is any discussion relating to a drill string comprising a plurality of coupled tubulars forming an electromagnetic network and performing the claimed operations. Tubel et al, like the other cited art, lacks any disclosure relating to drilling operations and any appreciation for the complexities involved with electromagnetic networks established via coupled tubulars for such operations. In sum, none of the references propose techniques which would lead to or suggest the claimed

invention to one skilled in the art. Furthermore, there is no suggestion discerned in any of these references of modifying the devices or methods disclosed therein in the direction of amended independent claims 1, 12 and 21, nor is there any suggestion of the desirability of such modifications.

Applicants respectfully submit that amended claims 1, 3-12 and 14-30 are in condition for allowance. If there are any questions concerning the above, please contact the undersigned at 281 878-5675.

Respectfully submitted,

/Victor H. Segura/

Electronically signed by Victor H. Segura, Reg. No. 44329, on 4/17/2008.

Grant Prideco
400 N. Sam Houston Pkwy East
Suite 900
Houston, TX 77060
Ph: 281 878-5675
Fax: 281 878-5720

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